

# AX-1

## SERVICE NOTES

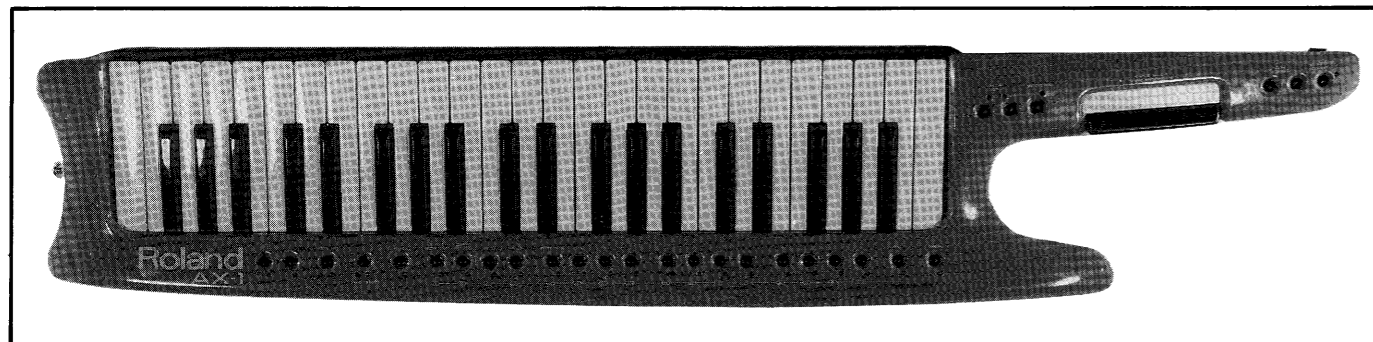
First Edition

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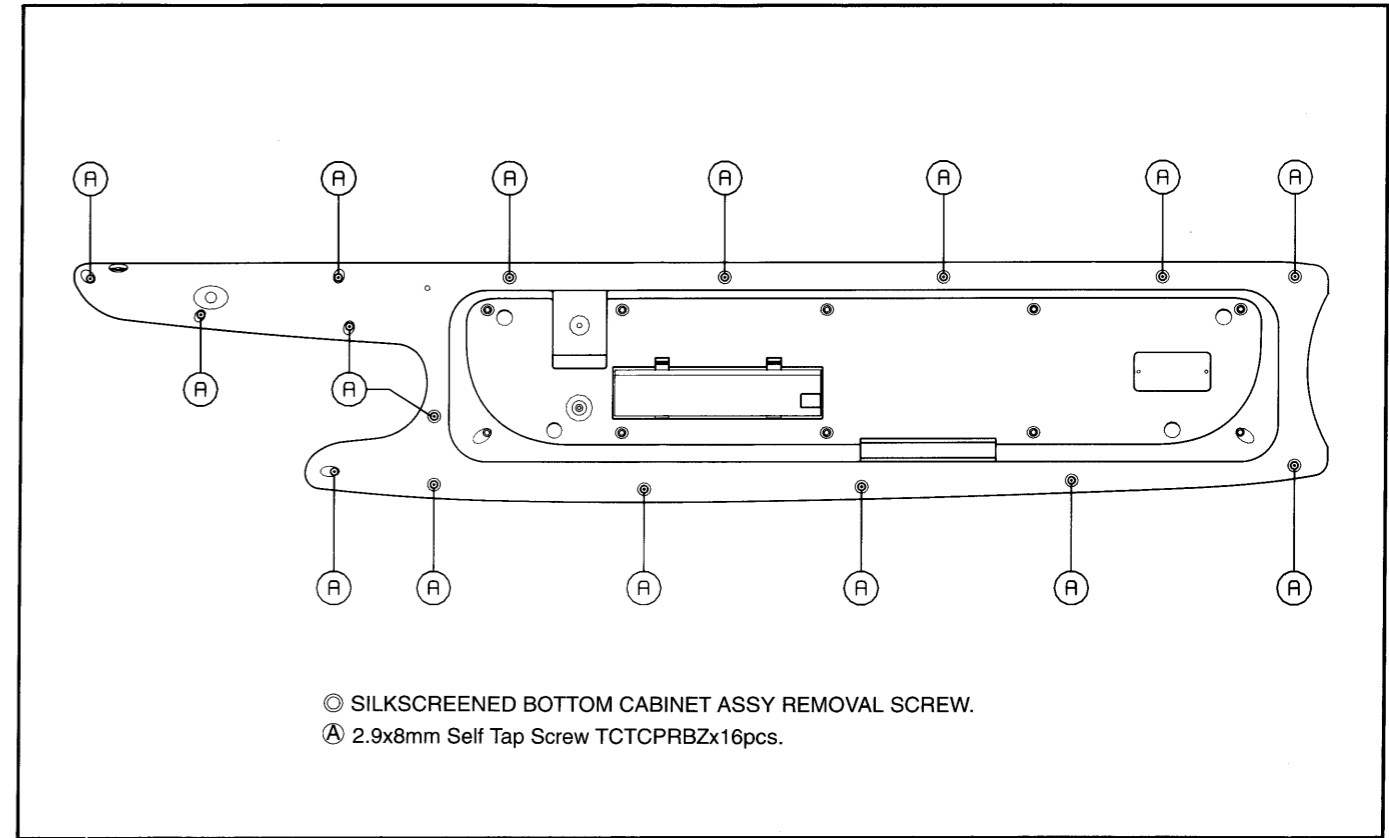
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### SPECIFICATIONS/仕様

- ◎KEYBOARD ..... : 45 keys dynamic sensitive.
- ◎SOUND SOURCE ..... : Completely compatible with Roland GS Format.
- ◎USER PATCHES ..... : 32.
- ◎CURRENT DRAW ..... : 80mA(DC 9V).
- ◎BATTERY LIFE ..... : Approximately 25 hours. (use alkaline battery type.)  
NOTE: These figures will vary depending on the actual conditions of use.  
注: 連続使用時の値。
- ◎DIMENSIONS ..... : 39-3/4(W)x 7-11/16(D)x 4(H) inches  
1010(W)x 195(D)x 102(H) mm
- ◎WEIGHT ..... : 6 lbs 10 oz./3 kg.
- ◎ACCESSORIES ..... : Owner's Manual : PNo.K6018124  
(English/German/French/Italian/Japanese)  
MIDI Guide : PNo.K6018109  
MIDI Cable 5m (black) : PNo.J3439116  
Alkaline Battery MN1500 : PNo.\*\*\*\*\*  
NOTE: The below parts are supplied as replacement instead of above parts.  
注: 上記の部品は、供給しません。補修用部品としては、下記の部品が供給されます。  
Battery SUM-3S : PNo.12569105
- ◎OPTIONS ..... : AC Adaptor ACA series.

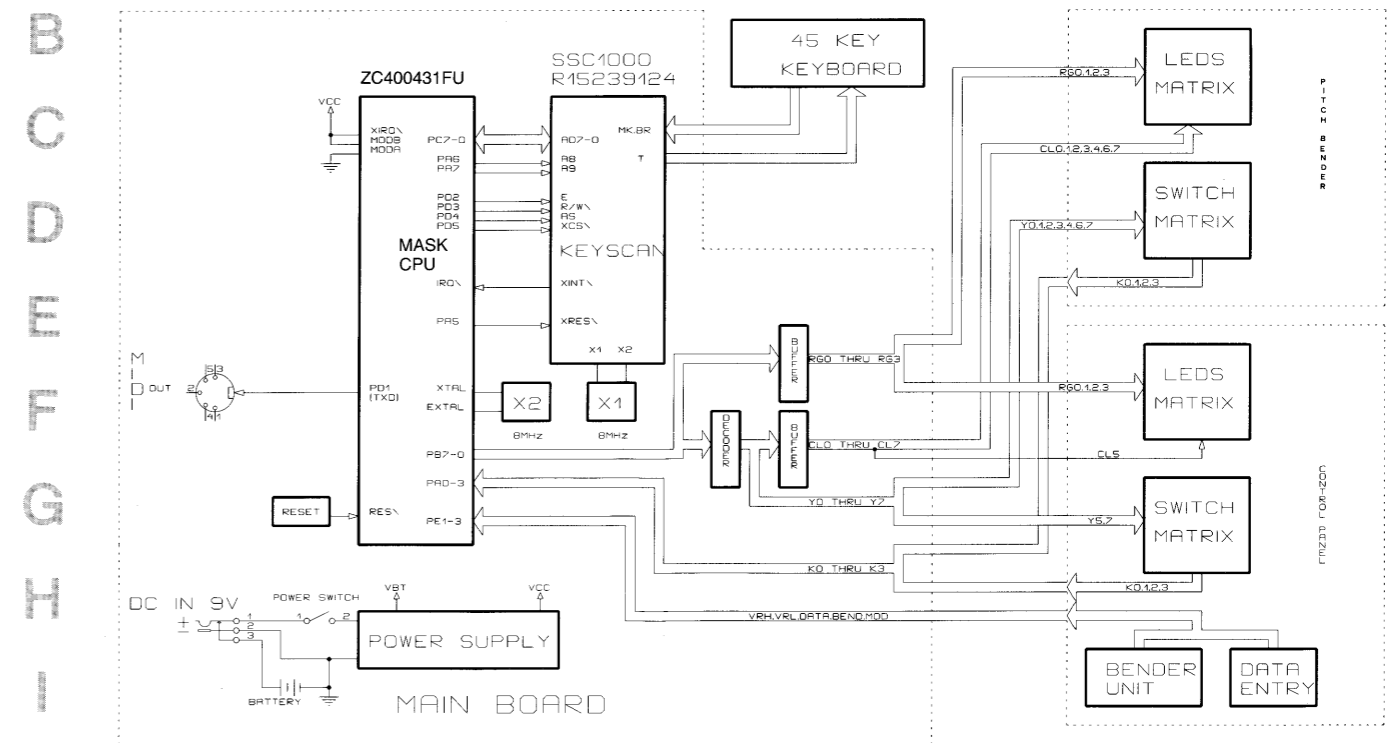


### DISASSEMBLY/分解方法

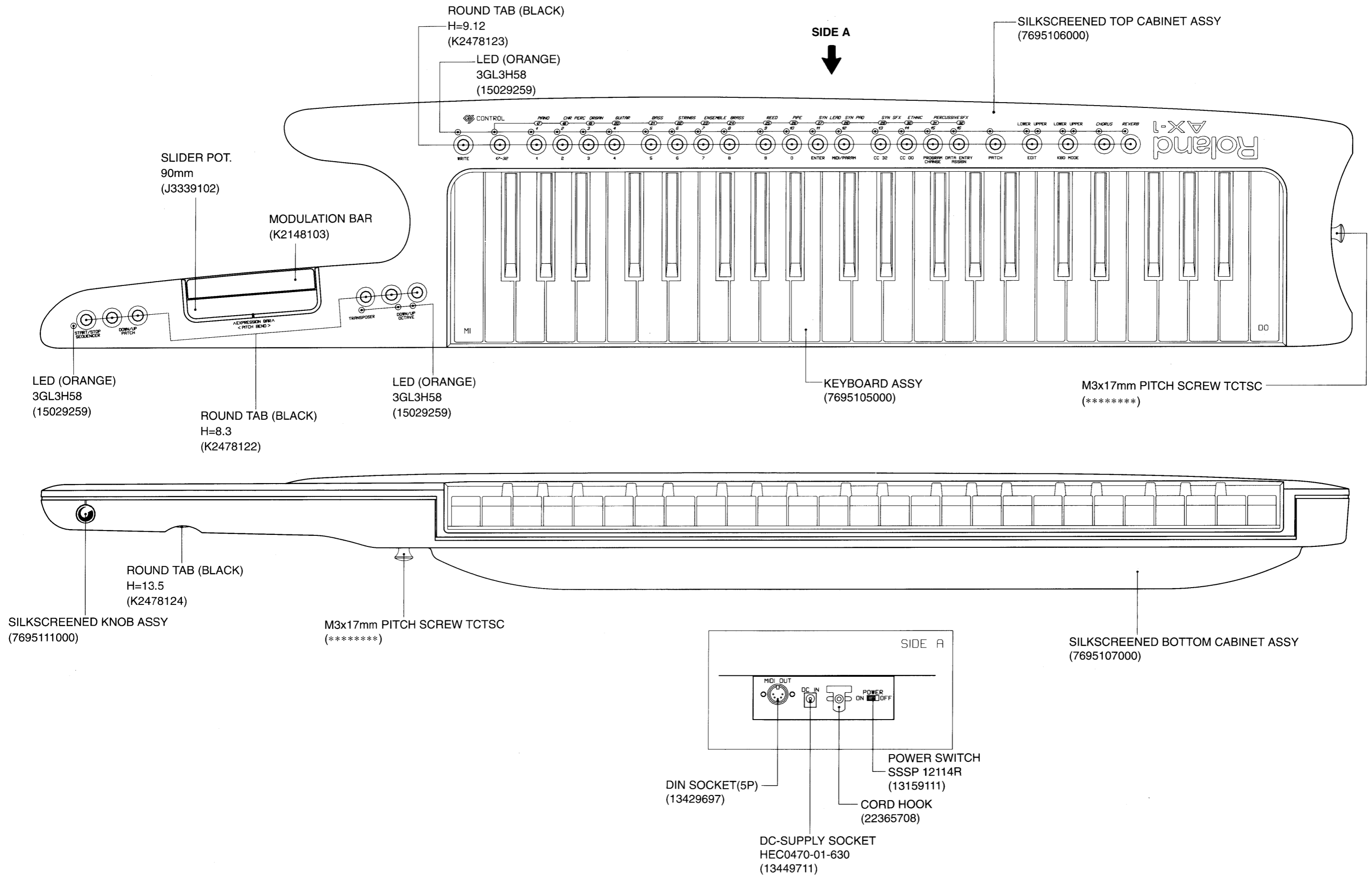


1 2 3 4 5 6 7 8 9 10 11 12 13 14

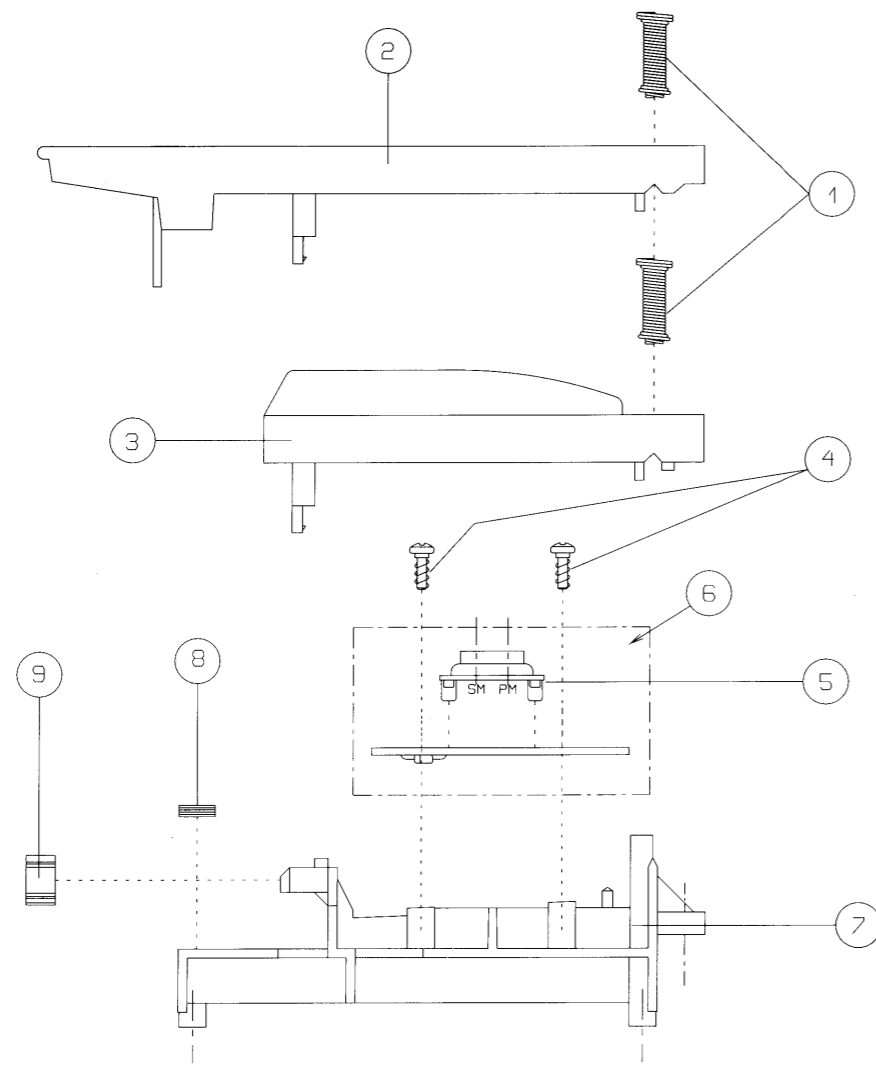
### BLOCK DIAGRAM/ブロック図



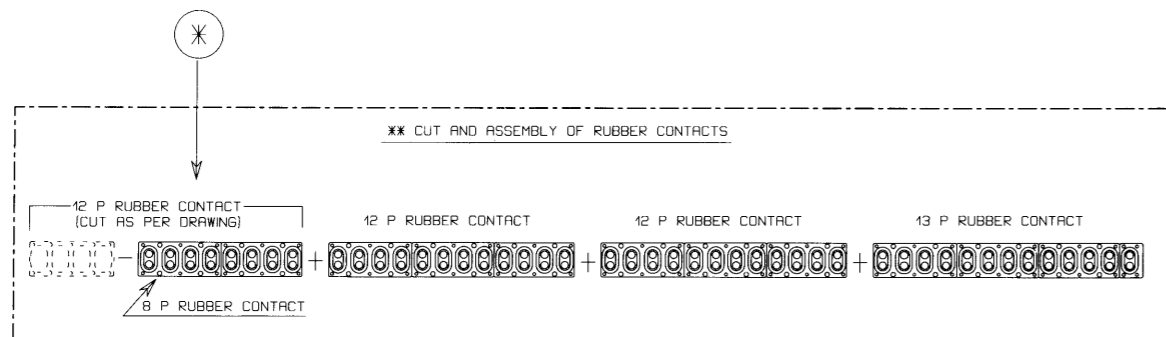
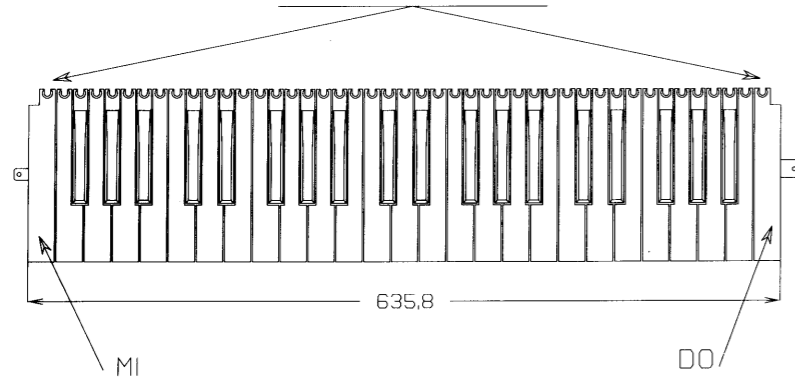
LOCATION OF CONTROLS/パネル配置図



KEYBOARD PARTS LIST/鍵盤パーツリスト



KEYBOARD WITH 45 KEYS  
TP7-BA SHARP-END KEY



NO.	PARTS NUMBER	PARTS NAME
①	22178226	KEY SPRING
②	J2579123	NATURAL KEY C5 (DO)
	J2579124	NATURAL KEY D6 (RE)
	J2579125	NATURAL KEY E7 (MI)
	J2579126	NATURAL KEY F1 (FA)
	J2579127	NATURAL KEY G2 (SOL)
	J2579128	NATURAL KEY A3 (LA)
	J2579129	NATURAL KEY B4 (SI)
	J2579130	NATURAL KEY C8 (DO fin)
	J2579131	NATURAL KEY E7 (MI iniz)
③	22578318	SHARP KEY
④	*****	2.9X 8mm FIX SCREW TCTCPRBZ (SCREW NO.206142908)
⑤	22185238	RUBBER CONTACT (12P)
	22185239	RUBBER CONTACT (13P)
	*****	RUBBER CONTACT (8P)
		NOTE:We can not supply "RUBBER CONTACT (8P)". We can supply "RUBBER CONTACT (12P)" as replacement parts. Please use it and cut as per drawing. 注:"RUBBER CONTACT (8P)"は、供給しませんので 注意して下さい。補修用部品としては、"RUBBER CONTACT (12P)"を供給します。図のように、切って 使用して下さい。
⑦	7695104000	CONTACT PCB ASSY (W/RUBBER CONTACT) or CONTACT BOARD ASSY
⑧	J2819101	PLASTIC CHASSIS (45KEYS)
⑨	J2599127	ADHESIVE RUBBER 8x2.5x636mm
⑩	22158789	GUIDE BUSHING

RESTORING THE FACTORY PRESETS/

ファクトリー・プリセット・データのロードの方法

1. Switch on your instrument keeping the tab "WRITE" pressed.
2. All 32 Factory Patched will be restored into your musical device.
3. During the restoring procedure, the LEDs on the panel will blink until the operation is over.
4. The restoring procedure requires 30 seconds approximately.

1. [WRITE]ボタンを押しながら、電源をいれてください。
2. すべてのファクトリーデータが、ロードされます。
3. ロード中はパネル上のすべてのLEDが点滅します。
4. 約30秒でロードが終了します。

NOTE : When switched on, your instrument will be automatically set to "Patch 1".

注：電源を入れると自動的に「パッチ1」になります。

# PARTS LIST FOR EXPLODED VIEW (NO1)/ 分解図 (その1)用パーツリスト

[PARTS]

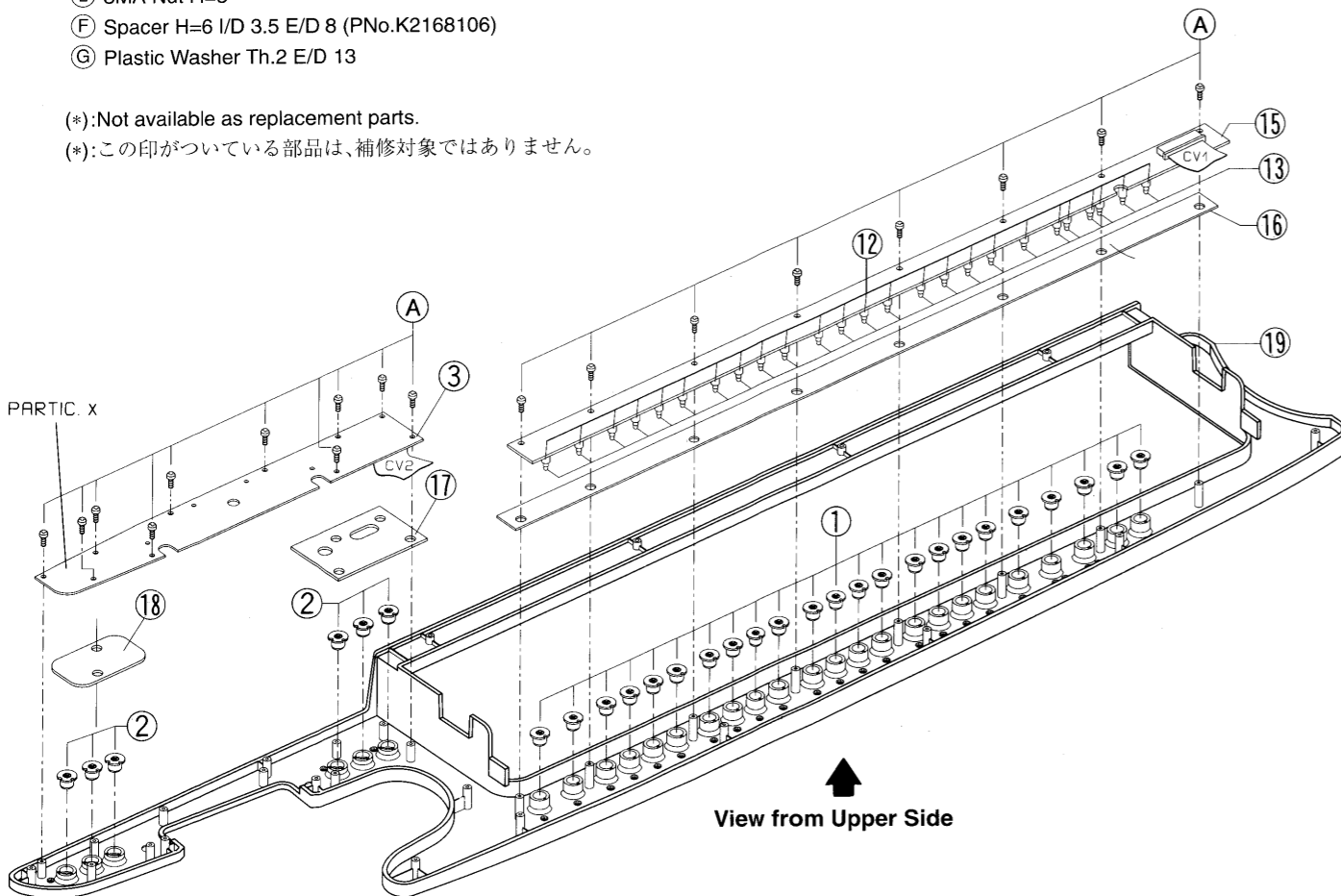
No.	Parts Name	Parts Number
①	Round TAB (black) H=9.12	K2478123
②	Round TAB (black) H=8.3	K2478122
③	Pitch Bender Assy (or Pitch Bender PCB Assy)	7695103000
④	Extension Spring	K2178101
⑤	Modulation Bar	K2148103
⑥	Slider Pot. 90mm	J3339102
⑦	Contact Holder + Sensor	K1188118
⑧	Contact F/Sensor	22925256
⑨	Rubber Sensor	22185229
⑩	Spring and Bar Holder	<del>K1188116</del> (*)
⑪	Hex. Spacer F/LED H=8.8	K2168107
⑫	Hex. Spacer F/LED H=12	K2168105
⑬	LED(orange) 3GL3H58	15029259
⑭	Switch EVQ-QVT 05G	13129753RI
⑮	Controls PCB Assy (or Controls Board Assy)	7695102000
⑯	Vibr. Damping Form (599x 20x 2mm)	<del>K2268112</del> (*)
⑰	Vibr. Damping Form ( 75x 49x 2mm)	<del>K2268111</del> (*)
⑱	Vibr. Damping Form ( 60x 36x 2mm)	<del>K2268110</del> (*)
⑲	Silkscreened Top Cabinet Assy	7695106000
⑳	Spacer F/LED H=0.9 E/D 5.5	K2168104

[SCREW]

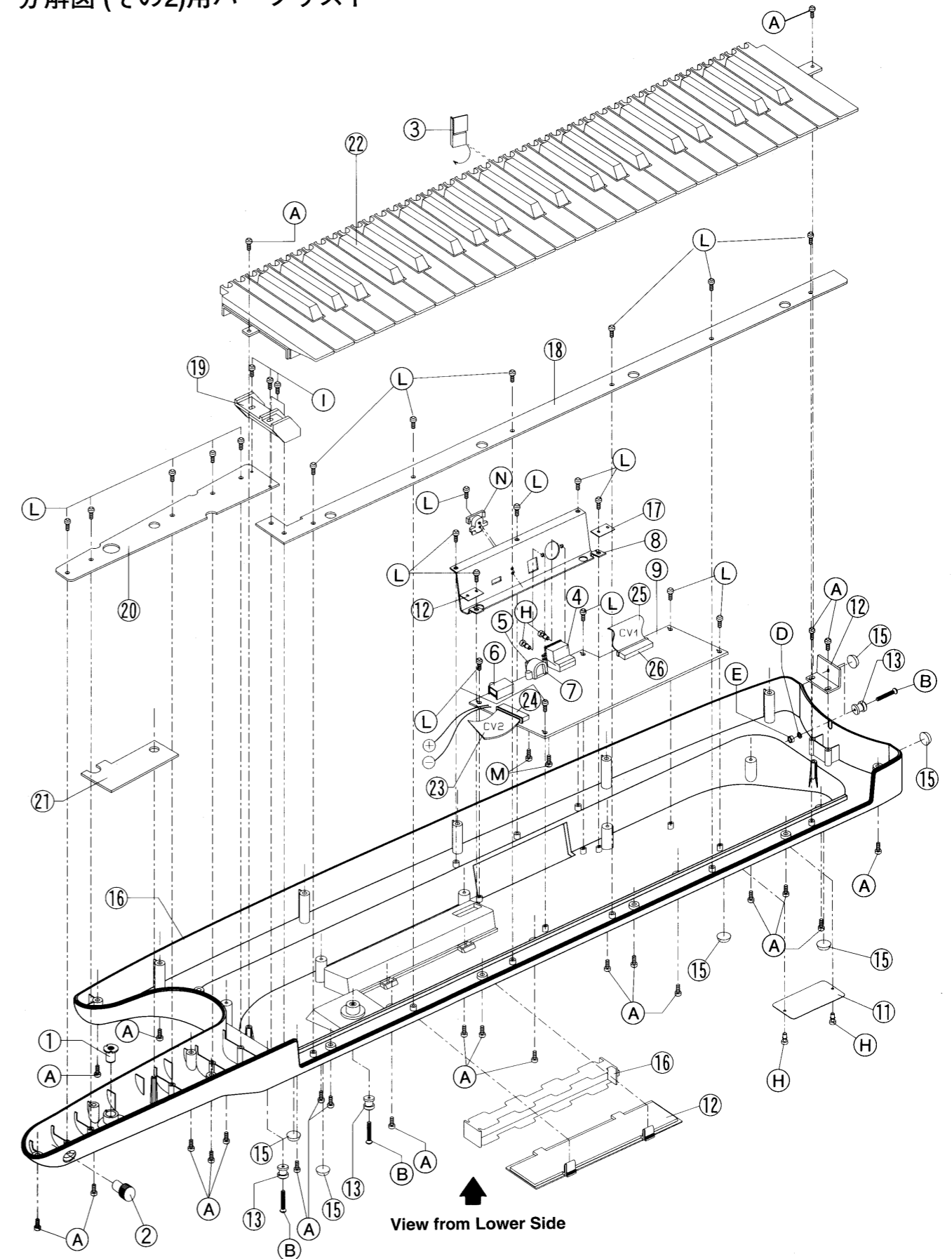
- A 2.9x 8mm Self Tap. Screw TCTCPRBZ
- B M3 x16mm Pitch Screw TCTC
- C M3 x10mm Pitch Screw TCTC
- E 3MA Nut H=3
- F Spacer H=6 I/D 3.5 E/D 8 (PNo.K2168106)
- G Plastic Washer Th.2 E/D 13

(\*):Not available as replacement parts.

(\*):この印がついている部品は、補修対象ではありません。



# PARTS LIST FOR EXPLODED VIEW (NO2)/ 分解図 (その2)用パーツリスト



[PARTS]

No. Parts Name	Parts Number
① Round TAB (black) H=13.5	: K2478124
② Silkscreened Knob Assy	: 7695111000
③ Support F/Keyboard Spacer	: <del>K1188120</del> (*)
④ DIN Socket (5P)	: 13429697
⑤ DC-Supply Socket HEC0470-01-630	: 13449711
⑥ Power Switch SSSP12114A	: 13159111
⑦ Power Socket Block	: 13429823RI
⑧ Varnished Socket Holder	: 7695110000
⑨ CPU PCB Assy (or CPU Board Assy)	: 7695101000
⑩ Battery Cover (red)	: 7695109000
⑪ Neutral Serial Number Plate	: <del>K2528102</del> (*)
⑫ Strip F/Belt Holder	: <del>K1188117</del> (*)
⑬ Male Lock for Belt	: <del>J2129101</del> (*)
⑭ Battery Holde	: J2209101
⑮ Spacer 3M ART. SJ5012 (Rubber Foot)	: 22358155
⑯ Silkscreened Bottom Cabinet Assy	: 7695107000
⑰ Copper Strip 0.5x 10x 20 mm	: <del>K3468132</del> (*)
⑱ Stiffener for front	: <del>K2128111</del> (*)
⑲ Chassis for Stiffener	: <del>K1188119</del> (*)
⑳ Stiffener for Neck	: <del>K2128112</del> (*)
㉑ Vibr. Damping Foam (39x 83x 2mm)	: <del>K2268113</del> (*)
㉒ Keyboard Assy (45keys)	: 7695105000
㉓ Flex. Cable 1.25B (46P) 42cm	: J3469146
㉔ Female Conn. C/1.25 -H (16P)	: J3429113
㉕ Flex. Cable 1.25B (22P) 16cm	: J3469147
㉖ Female Conn. C/1.25 -H (22P)	: J3429114

[SCREW]

- (A) 2.9x 8mm Self Tap. Screw TCTCPRBZ
  - (B) M3 x17mm Pitch Screw TCTSC
  - (D) Toothed Washer I/D 3
  - (E) 3MA Nut H=3
  - (H) Plastic Rivet SRB055
  - (I) 2.9x10mm Self Tap. Screw TCTC
  - (L) 2.9x 6mm Self Tap. Screw TCTCPRBZ
  - (M) 2.2x 6mm Self Tap. Screw TCTC
  - (N) Cord Hook (PNo.22365708)
- (\*):Not available as replacement parts.  
 (\*):この印がついている部品は、補修対象ではありません。

## PARTS LIST/パーツリスト

**SAFETY PRECAUTIONS:**  
 The parts marked △ have safety-related characteristics. Use only listed parts for replacement.  
 安全上の注意:  
 △が付いている部品は、安全上特別な規格でつくられたものです。交換の際は、指定された部品番号以外の部品は使わないようにして下さい。

**CONSIDERATIONS ON PARTS ORDERING**  
 When ordering any parts listed in the parts list, please specify the following items in the order sheet.  

QTY	PART NUMBER	DESCRIPTION	MODEL NUMBER
Ex. 10	22575241	Sharp Key	C-20/50
15	2247017300	Knob (orange)	DAC-15D

 Failure to completely fill the above items with correct number and description will result in delayed or even undelivered replacement.  
 パーツ発注に関するお願い  
 オーダーシートには、必ず下記の4項目は正確に記入して下さい。(例外は除く)  

必要数	パーツナンバー	品名	使用機種
例) 10	22575241	Sharp Key	C-20/50
15	2247017300	Knob (orange)	DAC-15D

 もし記入漏れ、誤記等がある場合、必要部品が発送出来なかったり、大幅な遅れの原因になります。御協力をお願いします。

CPU ==>>> CPU PCB ASSY(OR CPU BOARD ASSY)

CASING/ケース

7695406000	SILKSCREENED TOP CABINET ASSY
7695107000	SILKSCREENED BOTTOM CABINET ASSY
7695109000	BATTERY COVER (RED)
7695109000	VARNISHED SOCKET HOLDER
22365708	CORD HOOK
22358155	SPACER 3M ART. SJ5012 (RUBBER FOOT)

KNOB,BUTTON/ツマミ、ボタン

7695111000	SILKSCREENED KNOB ASSY
K2478122	ROUND TAB (BLACK) H=8.3
K2478124	ROUND TAB (BLACK) H=13.5
K2478123	ROUND TAB (BLACK) H=9.12

SWITCH/スイッチ

13129753RI	EVQ-QVT 05G	
13159111	SSSP12114A	POWER SWITCH

JACK,SOCKET/ジャック、ソケット

13449711	HEC0470-01-630	DC-SUPPLY SOCKET
13429697	5P	DIN SOCKET

BENDER UNIT/ベンダー・ユニット

7695103000	PITCH BENDER ASSY (OR PITCH BENDER PCB ASSY)
NOTE:Replacement "PITCH BENDER ASSY" include the following parts. Refer to the "EXPLODED VIEW OF PITCH BENDER ASSY"(P.4) for details. 注:補修用"PITCH BENDER ASSY"は、下記の部品を含みます。 詳細は、"PITCH BENDER ASSY分解図"(P.4)を参照して下さい。	
J3339102	90mm SLIDER POT.
22185229	RUBBER SENSOR
22925256	CONTACT F/SENSOR
K2178101	EXTENSION SPRING
K2148103	MODULATION BAR
K1188118	CONTACT HOLDER + SENSOR
K2168104	SPACER F/LED H=0.9 E/D 5.5
K2168107	HEX. SPACER F/LED H=8.8
13129753RI	EVQ-QVT 05G

KEYBOARD/鍵盤完成品

7695105000	KEYBOARD ASSY
NOTE:See "KEYBOARD PARTS LIST"(P.3) for details. 注:詳細は、"KEYBOARD PARTS LIST"(P.3)を参照して下さい。	

PCB ASSY/基板完成品

7695401000	CPU PCB ASSY (OR CPU BOARD ASSY)
7695102000	CONTROLS PCB ASSY (OR CONTROLS BOARD ASSY)

IC

K5258101	ZC400431FU	MASK CPU	IC3 on CPU
15239124	SSC1000	GATE ARRAY(KEY SCAN.)	IC4 on CPU
15169550RI	74HC138	3 to 8 DEMULTIPLEXER	IC7 on CPU
15169334HO	74LS05P	HEX O.C. INVERTER	IC2 on CPU
15219183	M51953AL	RESET IC	IC1 on CPU
15199559RI	TD62506P	BUFFER	IC5 on CPU
15199560R	TD62305AP	BUFFER	IC6 on CPU

TRANSISTOR/トランジスター

15119155RI	BC/560-B
J5119101	BD371C

DIODE/ダイオード

15029259	3GL3H58	LED(ORANGE)
15019345RI	BZX79C 5.6V	ZENER (5.6V)
15019158R	IN-4001	
15019159RI	1N-4148	

RESISTOR/抵抗

13910103	S.L.8X10K +C	RESISTOR ARRAY
13919253RI	S.L.8X15K +C	RESISTOR ARRAY

POITENTIOMETER/ポリューム

J3219103I	10KB H=15	ROTARY POT.
J3339102	90mm	SLIDER POT.

CAPACITOR/コンデンサー

13519452	100nF/ 25V Z	CERAMIC COND.
13639179RI	100uF/ 25V	ELECTRL.COND.-V
13639169SOI	47uF/ 25V	ELECTRL.COND.-V
13639206SO	10uF/ 50V	ELECTRL.COND.-V
13639255RI	1uF/100V	ELECTRL.COND.-V

INDUCTOR,COIL,FILTER/インダクタ、コイル、フィルター

12449382RI	PLT1-R53C	NOISE SUP.
12449370	SBT-0160W	NOISE SUP.
12449326	SBT-0460	NOISE SUP.
13529187	ELKTR391CA	NOISE SUP.
12449380	EXC-ELDR25V	NOISE SUP.

CRYSTAL,RESONATOR/クリスタル、発振子

15299112RI	8MHZ	CERAMIC
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CONNECTOR/コネクタ

13419677RI	AMP C/1.27 (16P)	FEMALE CONN.
J3429113	C/1.25 -H (16P)	FEMALE CONN.
J3429114	C/1.25 -H (22P)	FEMALE CONN.

WIRING,CABLE/ワイヤリング、ケーブル

23488545	FLAT CABLE ASSY (16P) (18)
7695108000	FLAT CABLE ASSY (16P) (24)
J3469146	FLEX. CABLE 1.25B (46P) 42cm
J3469147	FLEX. CABLE 1.25B (22P) 16cm

SCREW/ネジ類

*****	2.2X 6mm SELF TAP. SCREW TCTC (SCREW NO.201132206)
*****	2.9X10mm SELF TAP. SCREW TCTC (SCREW NO.201132910)
*****	2.9X 6mm SELF TAP. SCREW TCTCPRBZ (SCREW NO.206142906)
*****	2.9X 8mm SELF TAP. SCREW TCTCPRBZ (SCREW NO.206142908)
*****	M3X10 mm PITCH SCREW TCTC (SCREW NO.215133010)
*****	M3X16 mm PITCH SCREW TCTC (SCREW NO.215133016)
*****	M3X17 mm PITCH SCREW TCTSC (SCREW NO.217133017)
*****	3MA NUT H=3 (SCREW NO.260133003)
*****	PLASTIC WASHER TH.2 E/D 13 (SCREW NO.271991001)
*****	TOOTHED WASHER I/D 3 (SCREW NO.273990001)

MISCELLANEOUS/その他

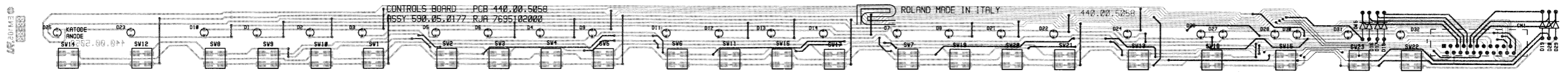
K2168106	SPACER H=6 I/D 3.5 E/D 8
K2168105	HEX. SPACER F/LED H=12
K2168104	SPACER F/LED H=0.9 E/D 5.5
K2168107	HEX. SPACER F/LED H=8.8
J2159102	PLASTIC RIVET SRB055
J2209101	BATTERY HOLDER
22185229	RUBBER SENSOR
22925256	CONTACT F/SENSOR
K1188116	BATTERY CONNECTION
K2178101	EXTENSION SPRING
K2148103	MODULATION BAR
K1188118	CONTACT HOLDER + SENSOR
13429823RI	POWER SOCKET BLOCK

ACCESSORIES(Standard)/標準付属品

K6018126	OWNER'S MANUAL(ENGLISH/GERMANY/FRENCH/ITALY/JAPANESE)
K6018109	MIDI GUIDE
J3439116	MIDI CABLE (BLACK) 5m
J2319101	BLACK BELT (1.6m)
*****	MN1500 ALKALINE BATTERY
NOTE:The below parts are supplied as replacement instead of above parts. 注:上記の部品は、供給しません。 補修用部品としては、下記の部品が供給されます	
12569105	Alkaline Battery SUM-3S

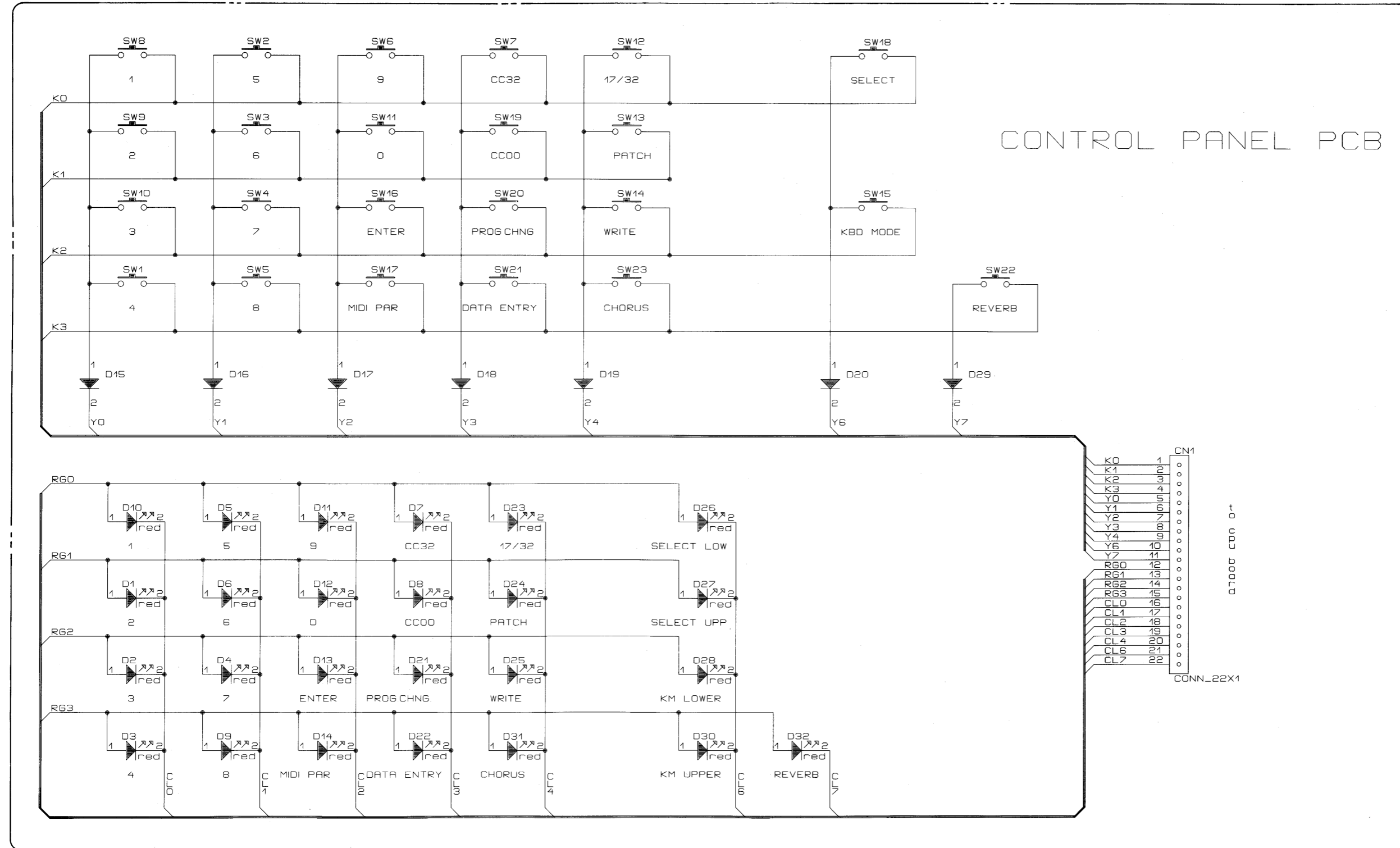
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

A **CONTROLS PCB ASS'Y(or CONTROLS BOARD)**  
ASSY 7695102000



View from component side

D **CONTROLS PCB ASS'Y(or CONTROLS BOARD)**

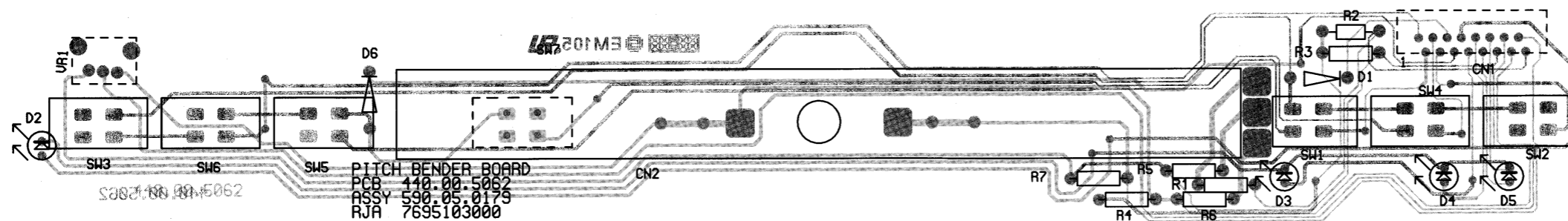


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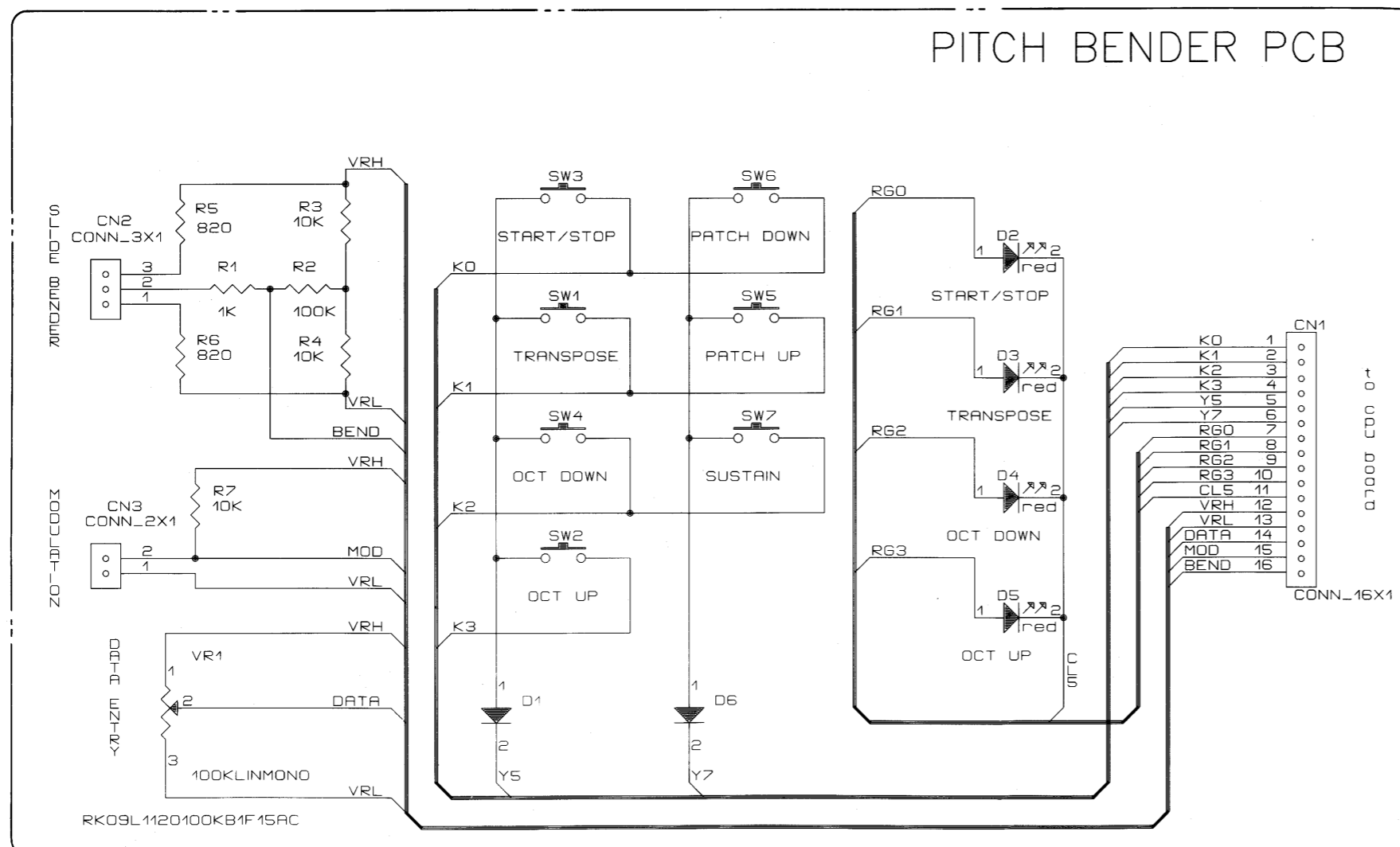
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**PITCH BENDER ASS'Y(or PITCH BENDER BOARD)**  
ASSY 7695103000



View from component side

**PITCH BENDER ASS'Y(or PITCH BENDER BOARD)**



NOTE : Replacement "PITCH BENDER ASSY" include the following parts.  
Refer to the "EXPLODED VIEW OF PITCH BENDER ASSY"(P.4) for details.

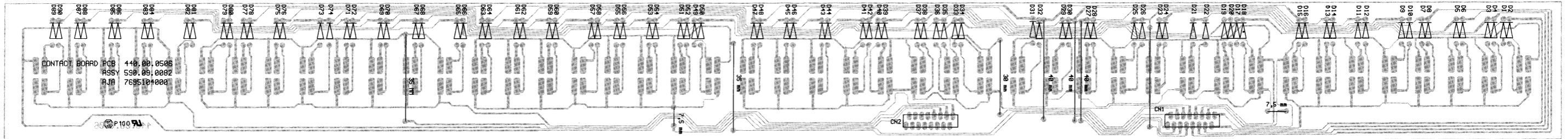
注 : 補修用 "PITCH BENDER ASSY" は下記の部品を含みます。  
詳細は "PITCH BENDER ASSY 分解図"(P.4) を参照して下さい。

J3339102	90mm	SLIDER POT.
22185229		RUBBER SENSOR
22925256		CONTACT F/SENSOR
K2178101		EXTENSION SPRING
K2148103		MODULATION BAR
K1188118		CONTACT HOLDER + SENSOR
K2168104		SPACER F/LED H=0.9 E/D 5.5
K2168107		HEX. SPACER F/LED H=8.8
13129753RI		EVQ-QVT 05G

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

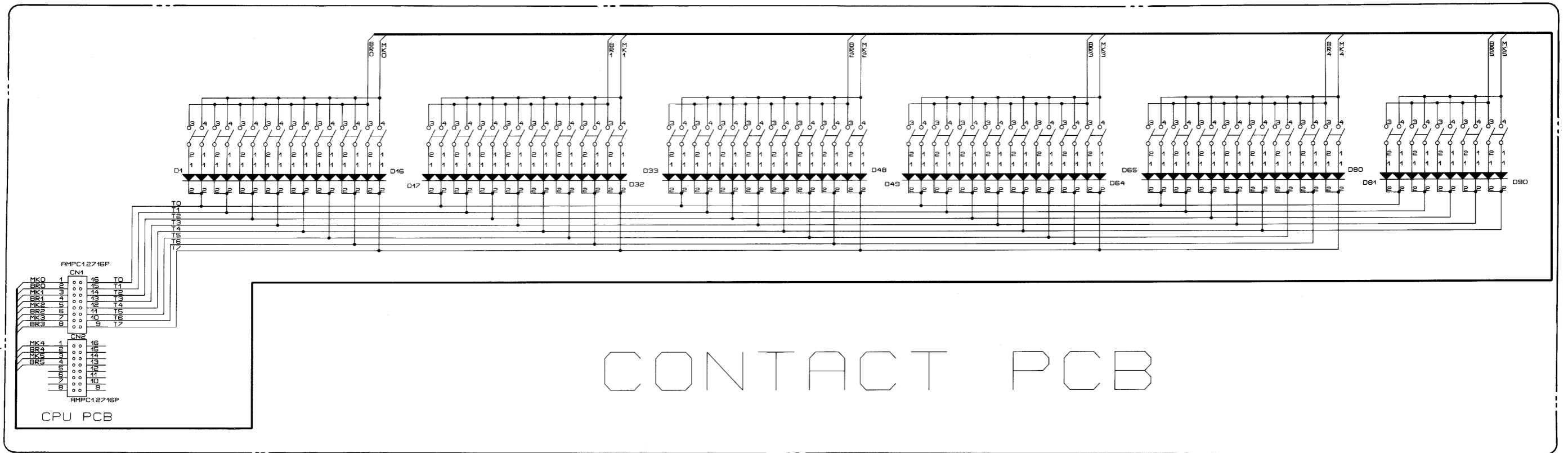
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### CONTACT PCB ASS'Y w/RUBBER CONTACT(or CONTACT BOARD) ASSY 7695104000



View from component side

### CONTACT PCB ASS'Y w/RUBBER CONTACT(or CONTACT BOARD)

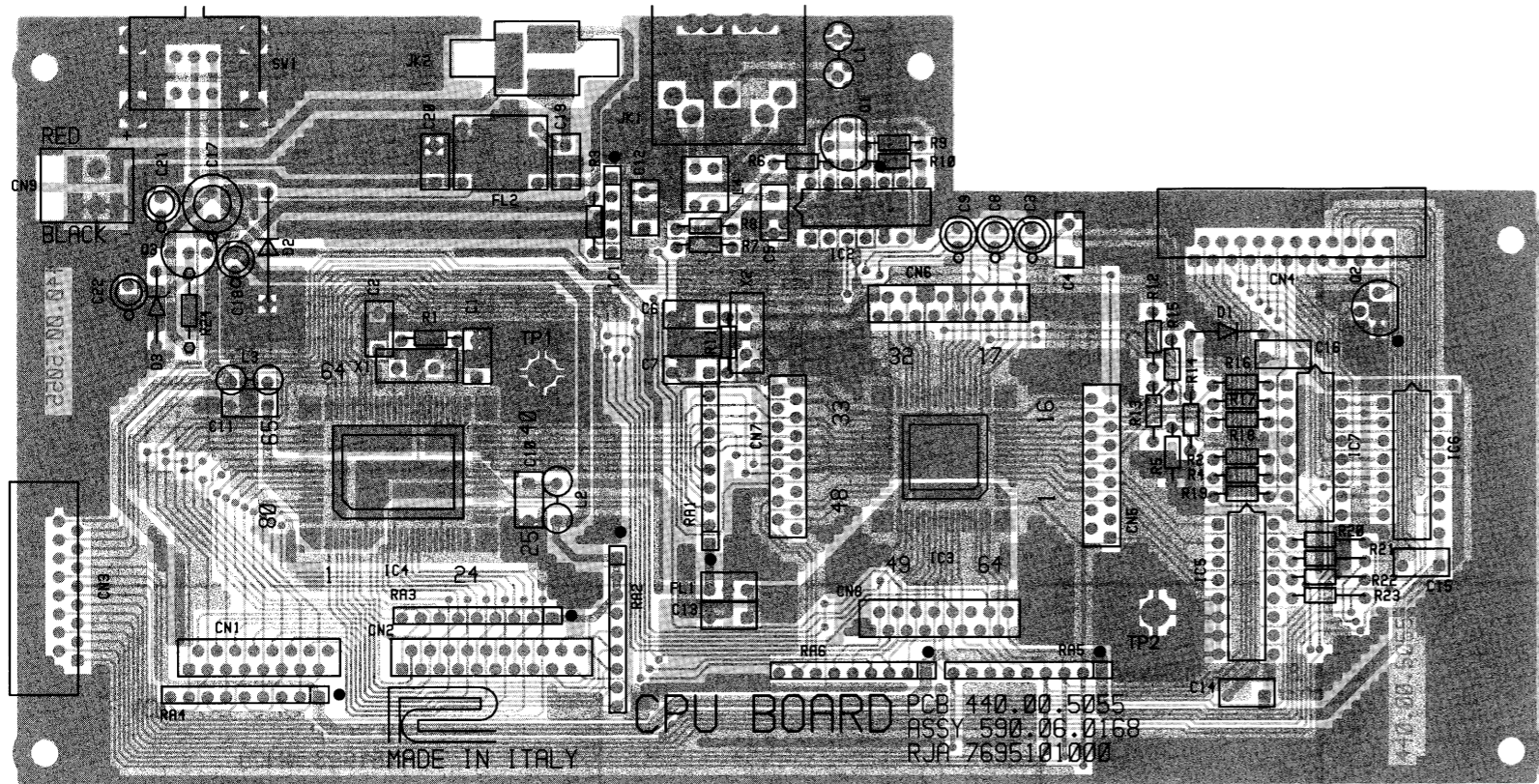




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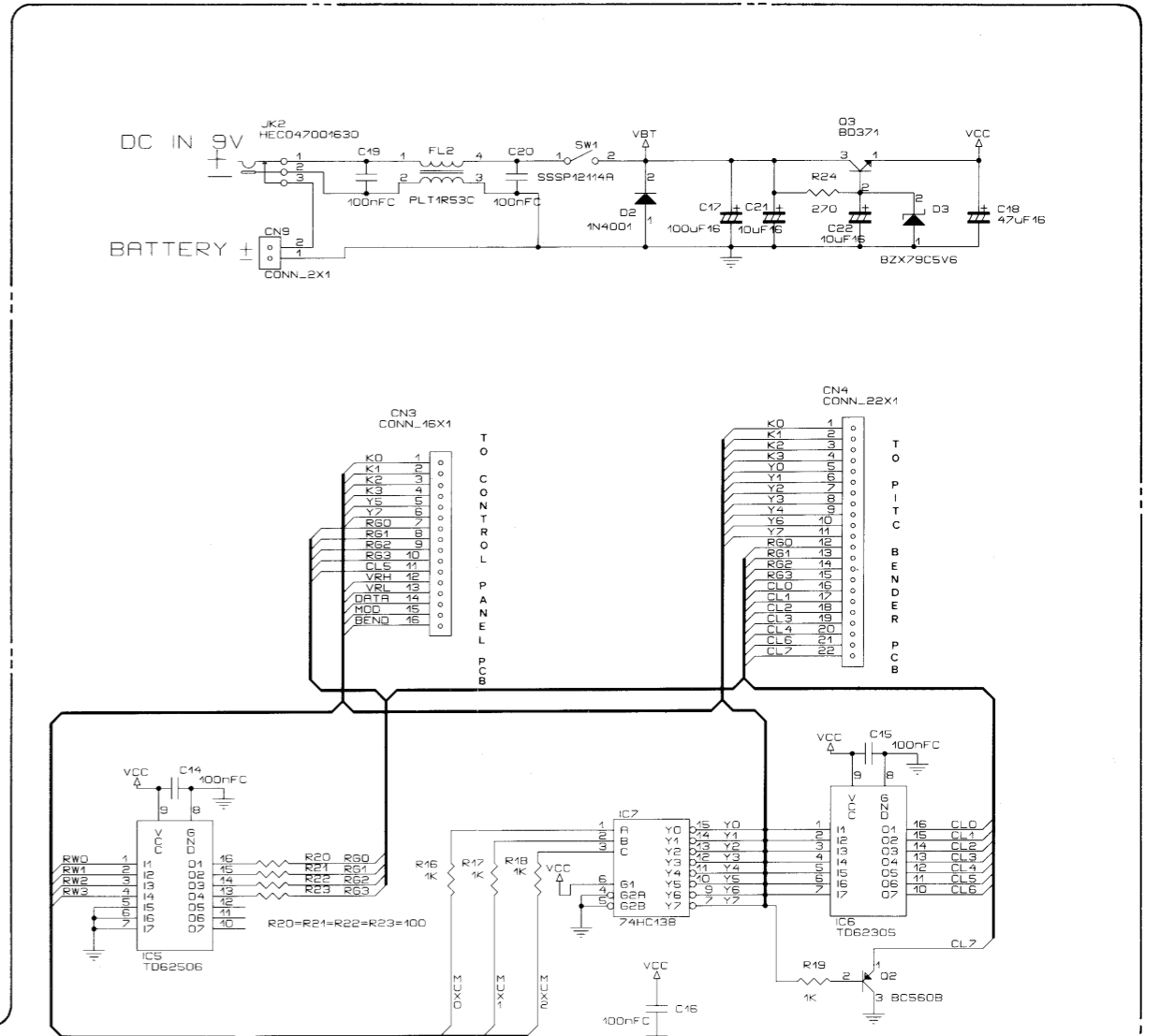
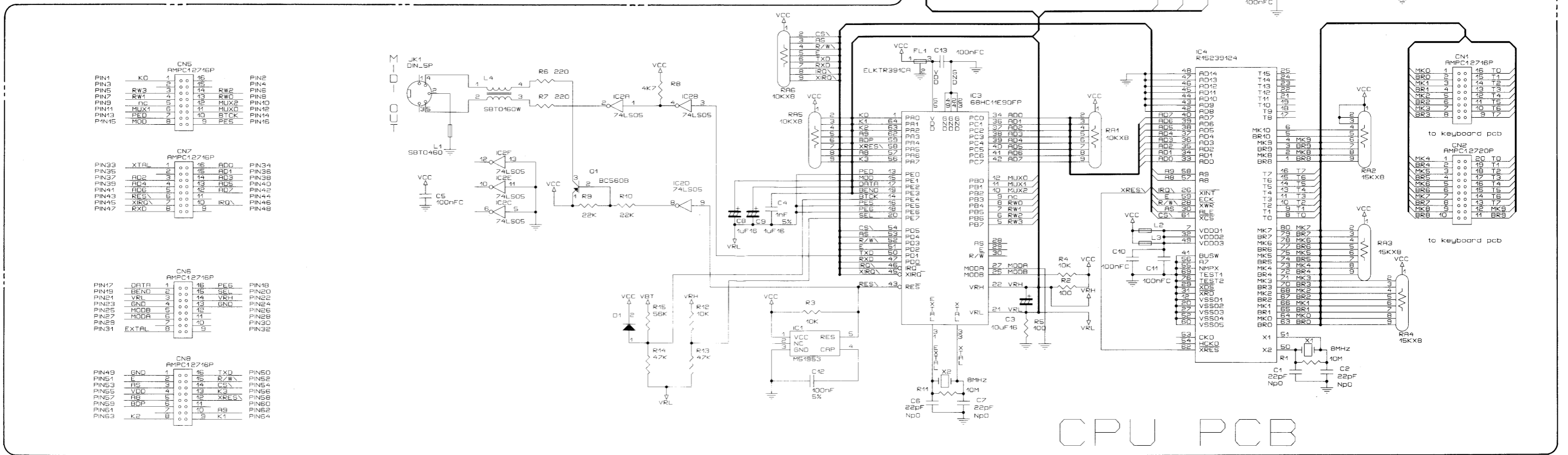
A  
B  
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D  
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H  
I  
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K  
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T  
U

**E CPU PCB ASS'Y(or CPU BOARD)**  
ASSY 7695101000

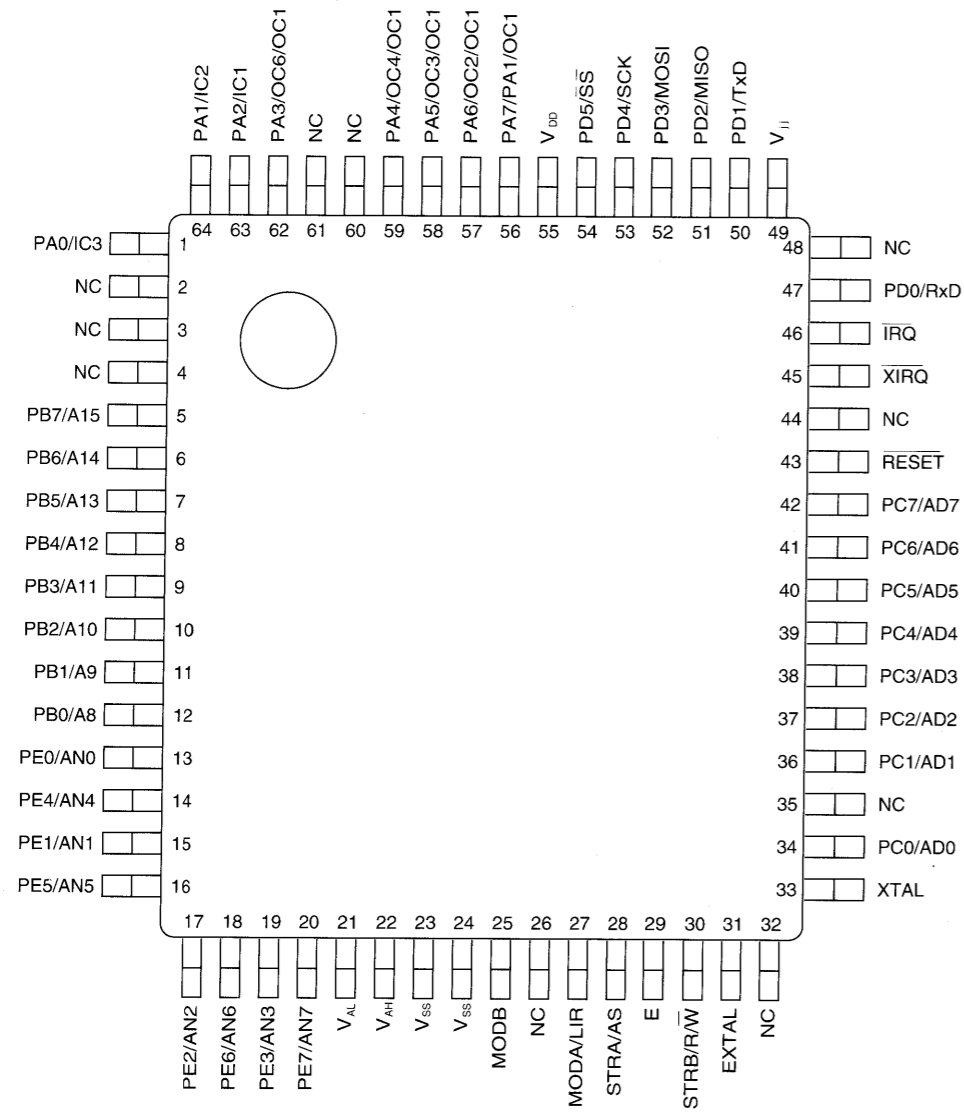


View from component side

**E CPU PCB ASS'Y(or CPU BOARD)**

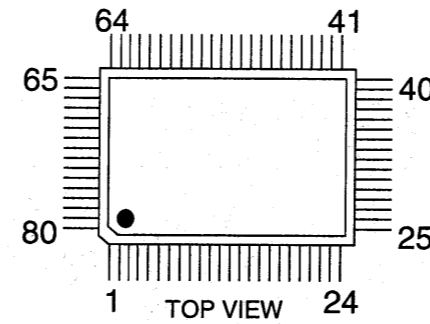


IC DATA/ICデータ



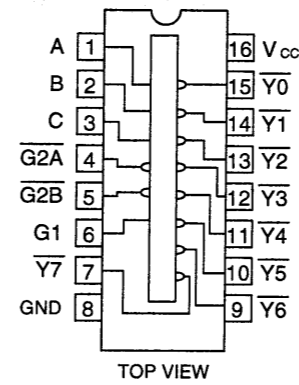
MASK CPU (IC3 on CPU BOARD)  
ZC 400431FU  
(K5258101)

Gate Array (Key Scan)  
SSC1000 (IC4 on CPU BOARD)  
(15239124)

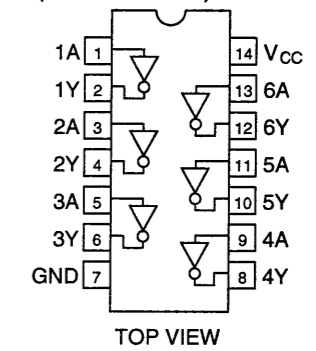


PIN NO.	NAME	I/O	PIN NO.	NAME	I/O	PIN NO.	NAME	I/O	PIN NO.	NAME	I/O
1	BR8	I	21	T11	O	41	BUSW	I	61	XCS	I
2	MK8	I	22	T12	O	42	AD8	I/O	62	XRES	I
3	BR9	I	23	T13	O	43	AD9	I/O	63	BRO	I
4	MK9	I	24	T14	O	44	AD10	I/O	64	MK0	I
5	BR10	I	25	T15	O	45	AD11	I/O	65	BR1	I
6	MK10	I	26	XINT	O	46	AD12	I/O	66	MK1	I
7	VDD	P	27	VSS	P	47	AD13	I/O	67	BR2	I
8	T0	O	28	XWR	I	48	AD14	I/O	68	MK2	I
9	T1	O	29	XDS	I	49	VDD	P	69	TEST	I
10	T2	O	30	ALE	I	50	X2	O	70	BR3	I
11	T3	O	31	XRO	I	51	X1	I	71	MK3	I
12	VSS	P	32	VRR	P	52	VSS	P	72	BR4	I
13	T4	O	33	AD0	I/O	53	CKO	O	73	MK4	I
14	T5	O	34	AD1	I/O	54	HCKO	O	74	BR5	I
15	T6	O	35	AD2	I/O	55	NMPX	I	75	MK5	I
16	T7	O	36	AD3	I/O	56	A7	I	76	TEST	I
17	T8	O	37	AD4	I/O	57	A8	I	77	BR6	I
18	T9	O	38	AD5	I/O	58	A9	I	78	MK6	I
19	T10	O	39	AD6	I/O	59	ECK	I	79	BR7	I
20	VSS	P	40	AD7	I/O	60	VSS	P	80	MK7	I

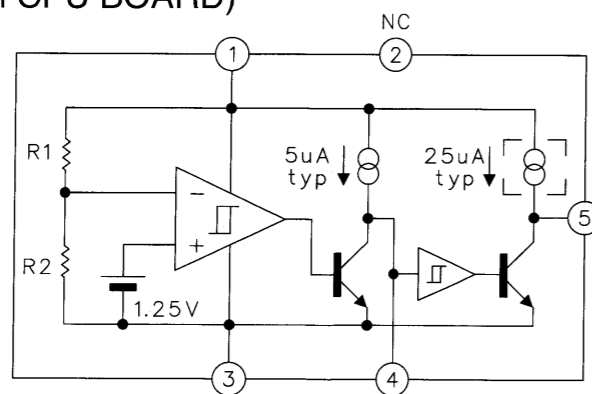
3 to 8 Demultiplexer (IC7 on CPU BOARD)  
74HC138  
(15169550RI)



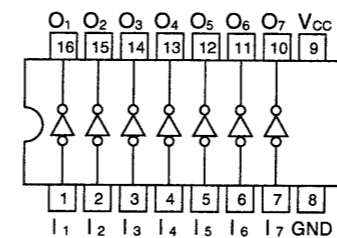
HEX O.C. Inverter  
(IC2 on CPU BOARD)  
74LS05P  
(15169334HO)



Reset IC (IC1 on CPU BOARD)  
M51953AL  
(15219183)



BUFFER  
(IC5 on CPU BOARD)  
TD62506P  
(15199559RI)



BUFFER  
(IC6 on CPU BOARD)  
TD62305AP  
(15199560RI)

